

## BOOK REVIEWS

ROBERT H. WEBB, STANLEY A. LEAKE, and RAYMOND M. TURNER. 2007. **The Ribbon of Green: Change in Riparian Vegetation in the Southwestern United States.** (ISBN 0-8165-2588-9, hbk.). The University of Arizona Press, 355 S. Euclid, Suite 103, Tucson, AZ 85719-6654, U.S.A. (**Orders:** www.uapress.arizona.edu, 520-621-3920, 520-621-8899 fax). \$75.00, 462 pp., b/w photos, 9¼" × 12¼".

From the outside, this large book, with its gorgeous color photograph of the San Juan River on the cover, looks like a coffee-table book. It is actually a fascinating study of the riparian vegetation of the southwestern United States. Riparian vegetation accounts for one third of the vascular plants in this region and is home to many species of wildlife. Unlike many ecological books, this one actually contains some very welcome good news- riparian vegetation is increasing in many areas. This increase is due to many factors, including winter floods that allow the establishment of new species on disturbed areas, flood control, and favorable climatic conditions. The authors focus on factors that affect the woody riparian vegetation of major river valleys in Arizona, Utah, southern Nevada, and southeastern California. They use repeat photography and hydrological research to analyze changes in riparian vegetation in these areas. This long-term study encompasses 140 years of photographic history, and black-and-white photographs illustrate the book. The authors present an analysis of thousands of photographs, including early photographs by surveyors, scientists, explorers, and tourists, as well as modern-day repeat photographs of the same locations. Woody plants and identifiable perennials are the focus of the authors' photographic analysis. This book paints a surprising portrait of the changes in southwestern riparian ecosystems over the last century and a half.—*Marissa N. Opel, MS, Irving, Texas, U.S.A.*

CEIRIDWEN TERRILL Foreword by GARY PAUL NABHAN. 2007. **Unnatural Landscapes: tracking invasive species.** (ISBN 0-8165-2523-4, pbk.). The University of Arizona Press, 355 S. Euclid Avenue, Suite 103, Tucson, AZ 85719, U.S.A. (**Orders:** www.uaapress.arizona.edu). \$17.95, 220 pp., 5 maps, 26 b/w photos, 6½" × 8".

Terrill's book on unnatural landscapes is a descriptive journey through various islands that have been impacted by invasive species in many ways. Ceiridwen picked four North American islands to study invasive species of birds, fishes, plants and mammals since "islands are excellent places for exploring the problem of invasive species because their native plants and animals are highly specialized, isolated organisms, often few in number, and highly susceptible to the negative effects of introduced species."

In reading this book, one can better understand why an exotic or an introduced species may become invasive and how it becomes detrimental to other species, and even more so to the entire ecosystem. For instance, the author points out that a horticultural flat of the African Hottentot fig (*Carpobrotus edulis*) is sold for \$12.99 without any warning about the potential invasive nature of the plant. Another concern is the introduction of exotic pets that can provoke a chain reaction through the introduction of unknown foreign parasites and diseases.

"Invasive species haven't just outcompeted natives for nutrients, space, and water. They also can change fire regimes, alter streams courses, prevent native plants from regenerating, negatively affect human health and local economies." One good example given by Mrs. Terrill is a crevice-dwelling freshwater crayfish in warm pools of Ash Meadows, Nevada. After introduction, the crevice-dweller (*Procambarus clarkii*) became a top carnivore and keystone species in the community. A keystone species has a key role in an ecosystem, affecting many other species, and whose removal leads to a series of extinctions within the ecosystem.

Even if a good question is raised, "extinction is a natural process, so what's the big deal?," Terrill states that one of the methods to deal with invasive species is to eradicate them. It is simpler on an island because there is less risk of reinvasion. Even after eradication, and exotic animals such as sheep are removed, it can sometimes take more than a decade for the landscape to fully recover. Eradication of certain plants may be achieved by reducing or eliminating essential minerals elements. For instance, Cheatgrass (*Bromus tectorum*) was successfully removed on Anaho Island National Wildlife Refuge (Nevada) by the removal of nitrogen. Invasive pigs on Santa Cruz Island (California) have been controlled through large-scale hunting, relocation on and off the island, and contraceptive measures.

Ceiridwen Terrill hopes people will begin to take personal action to stop or at least slow down the spread of exotic species, and in a larger political arena, she encourages people to influence public policy with their vote. I think this book is more about letting people know of the potential problems and dangers of invasive species. Education can go along way in prevention. An "Ounce of prevention is worth a pound of cure." Guidelines need to be implemented and prominently displayed and preventive equipment installed in more parks and natural areas for people to follow. Examples include, "Boot brushes on the mainland pier provide an opportunity for visitors to remove invasive seeds from their footwear before their trip to Santa Cruz Island." Also, visitors to this Island are encouraged not to hike through weed-infested areas, but to stay on trails to avoid disturbing soils and making it easier for invasive plants to establish.

We definitely need more people exposing the problem of invasive species to the general public. Terrill has done a marvelous job describing in simple terms, the problems and potential solutions of invasive species.—*Virginie H. Raquet, Botanical Research Institute of Texas, 509 Pecan Street, Fort Worth, TX 76102-4068, U.S.A., vraquet@brit.org.*